

GOVERNMENT OF THE DISTRICT OF COLUMBIA

District Department of the Environment



CHAPTER 2 TECHNICAL MEMORANDUM

TO: File

THROUGH: Stephen S. Ours, P.E. *SSO*
Chief, Permitting Branch

FROM: Gaurav Bansal *SSO For GB*
Environmental Engineer

SUBJECT: **Smithsonian Institution - National Zoological Park
Permit Number 6979
Permit to Construct and Operate a Sawdust Collector for Woodworking
Operations**

DATE: June 29, 2015

BACKGROUND INFORMATION

An initial permit application to construct and operate a recently installed sawdust collector at the National Zoological Park located at 3001 Connecticut Avenue NW, Washington, DC was received by the Air Quality Division on January 29, 2015. In support of the application, the Smithsonian Institution (the "Permittee") submitted manufacturer's specifications for the sawdust collector, including filter information, and an installation and operation manual for the equipment.

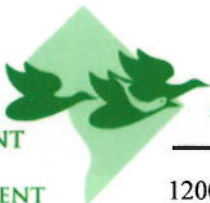
This permit will be published in the DC Register for to solicit any relevant public comment on July 10, 2015. Public comments for the permit action will be solicited through August 10, 2015.

The Smithsonian Institution has not requested that any of the materials submitted with this application be held confidential.

REGULATORY REVIEW

Chapter 2, Section 200: General Permit Requirements:

The woodworking equipment is a potential air pollution source of particulate matter and the sawdust collector is an emission control device. Thus a Chapter 2 permit is required. The



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Permittee is anticipating operating the equipment for two hours per day, three days per week, and 52 weeks per year.

Chapter 6, Section 603 and Appendix 6-1: Particulate Process Emissions

The discharge of particulate matter into the atmosphere from any process shall not exceed three hundredths (0.03) grains per dry standard cubic foot of the exhaust. To meet the particulate matter emissions standard, the facility is using a fabric filter with 99.5% efficiency. For this control device, the manufacturer recommends that the differential pressure across the filter read between 0.6 and 6 inches of water differential pressure. The differential pressure will change over time, initially falling in the lower range and then shifting to the higher end with increased equipment use.

To monitor the efficiency of the fabric filter, magnehelic gauges must be installed to show the differential pressure across the bags and must read between 0.6 and 6 inches of water when operating the bag house. The Permittee will monitor the differential pressure across the fabric filter (condition IV(a)), and purchase filters that are estimated to be 99.5% efficient for particulate matter greater than 1.0 micron in diameter (Condition III(b)).

According to the requirements of Chapter 6 Appendix 6-1, the facility will generate under 50 pounds of sawdust per hour. The maximum allowable total particulate matter emissions for this process flow is 0.24 pounds. A fabric filter with 99.5% efficiency in capturing particulate matter greater than 1.0 micron in diameter will ensure compliance with this regulation. While the fabric filter to be used has a lower capture efficiency (87% efficient) for particulate matter between 0.30 and 1.0 microns, it is unlikely that sawdust operations will generate such fine particulate matter, and to the extent that it is generated, it will be a small portion of the weight of the total particulate matter.

Additionally, to ensure the equipment is maintained, visible emissions monitoring and records of maintenance are required in the permit.

Chapter 6, Section 605: Particulates

The fugitive dust emission limitations of 20 DCMR 605 are applicable to the woodworking equipment and related sawdust collector. Reasonable precautions shall be taken to minimize the emissions of any fugitive dust into the outdoor atmosphere. Additionally, the emission of fugitive dust from any material handling, screening, crushing, grinding, conveying, mixing, or other industrial-type operation or process is prohibited. These requirements are found in Conditions II(a) and (b) of this permit. A related operational requirement is found in Condition III(e). The facility must monitor the site for compliance per Condition IV(d) and maintain records of deviations per Condition V(i).

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Chapter 6, Section 606: Visible Emissions

The visible emissions limitations of 20 DCMR 606.1 are applicable to this sawdust collector. Per this regulation, visible emissions shall not be emitted into the outdoor atmosphere from the operation of the concrete mix plant; provided that discharges not exceeding forty percent (40%) opacity (unaveraged) shall be permitted for two minutes in any sixty (60) minute period and for an aggregate of twelve (12) minutes in any twenty-four hour (24 hr.) period during start-up, or malfunction of equipment. However, given the type of emissions and equipment involved (a dust collector and large particle sawdust), any visible emissions would be a sign of failure of the filter housing or filters. As such, pursuant to 20 DCMR 201, a more stringent standard of zero visible emissions has been incorporated in Condition II(e). Monitoring for compliance is required pursuant to Condition IV(b). Records of any deviation must be kept pursuant to Condition V(g).

Chapter 9, Section 903: Odorous or Other Nuisance Air Pollutants

"An emission into the atmosphere of odorous or other air pollutants from any source in any quantity and of any characteristic, and duration which is, or is likely to be injurious to the public health or welfare, or which interferes with the reasonable enjoyment of life or property is prohibited [20 DCMR 903.1]" is applicable to all sources. This requirement is contained in Condition II(f) of the permit. Monitoring for compliance is required pursuant to Condition IV(c). Records of deviations must be kept pursuant to Condition V(h).

RECOMMENDATIONS

The application to construct and operate a sawdust collector to control emissions from woodworking operations and the attached permit comply with all applicable federal and District air pollution control laws and regulations.

Public comments for the permit action will be solicited from July 10, 2015 through August 10, 2015. AQD will resolve any comments received before issuing the permit, and if no comments are received, I recommend that permit (#6979) be issued in accordance with 20 DCMR 200.1 and 200.2.

SSO:GB

